

## HIGH POWER NPN SILICON TRANSISTORS

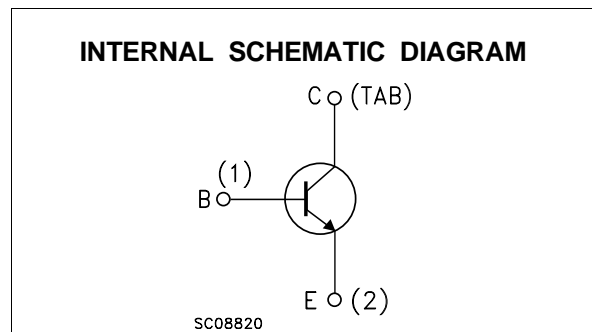
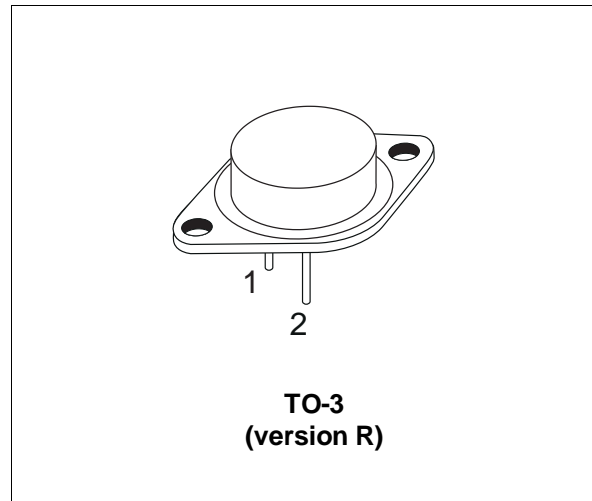
- STMicroelectronics PREFERRED SALESTYPES
- NPN TRANSISTOR
- HIGH VOLTAGE CAPABILITY
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

### APPLICATIONS

- HIGH FREQUENCY AND EFFICIENCY CONVERTERS
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

### DESCRIPTION

The BUX98 and BUX98A are Silicon Multi-Epitaxial Mesa NPN transistor in jedec TO-3 metal case, intended and industrial applications from single and three-phase mains operation.



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		BUX98	BUX98A	
$V_{CER}$	Collector-Emitter Voltage ( $R_{BE} = \leq 10 \Omega$ )	850	1000	V
$V_{CES}$	Collector-Base Voltage ( $V_{BE} = 0$ )	850	1000	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	400	450	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	7		V
$I_C$	Collector Current	30		A
$I_{CM}$	Collector Peak Current ( $t_p < 5$ ms)	60		A
$I_{CP}$	Collector Peak Current non Rep. ( $t_p < 20 \mu s$ )	80		A
$I_B$	Base Current	8		A
$I_{BM}$	Base Peak Current ( $t_p < 5$ ms)	30		A
$P_{tot}$	Total Power Dissipation at $T_{case} < 25 \text{ }^\circ\text{C}$	250		W
$T_{stg}$	Storage Temperature	-65 to 200		$^\circ\text{C}$
$T_j$	Max Operating Junction Temperature	200		$^\circ\text{C}$

## BUX98 / BUX98A

### THERMAL DATA

R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	0.7	°C/W
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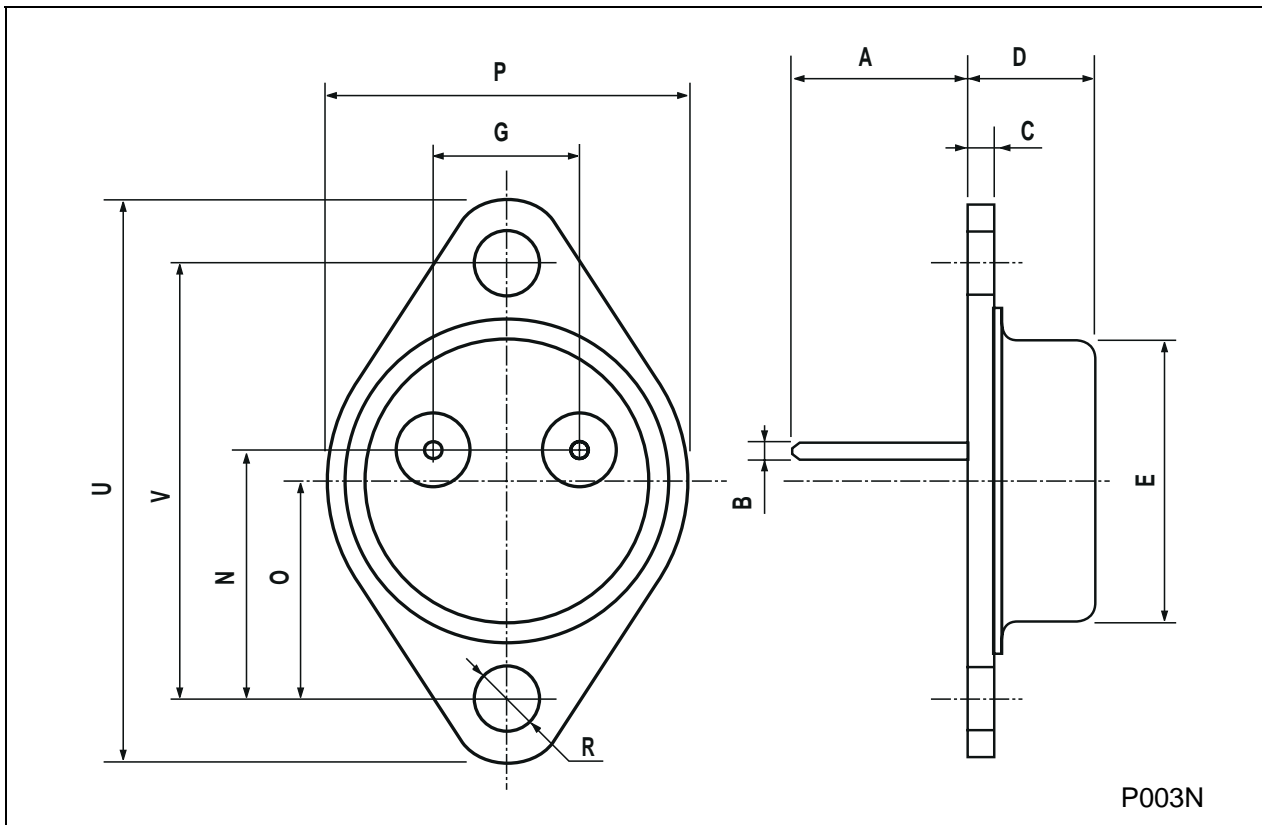
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CER</sub>	Collector Cut-off Current (R <sub>BE</sub> = 10 Ω)	V <sub>CE</sub> = V <sub>CES</sub>			1	μA
		V <sub>CE</sub> = V <sub>CES</sub> T <sub>case</sub> = 125 °C			8	μA
I <sub>CES</sub>	Collector Cut-off Current (V <sub>BE</sub> = 0 )	V <sub>CE</sub> = V <sub>CES</sub>			400	μA
		V <sub>CE</sub> = V <sub>CES</sub> T <sub>case</sub> = 125 °C			4	mA
I <sub>CEO</sub>	Collector Cut-off Current (I <sub>B</sub> = 0)	V <sub>CE</sub> = V <sub>CEO</sub>			2	mA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 5 V			2	mA
V <sub>CEO(sus)*</sub>	Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 200 mA for <b>BUX98</b> for <b>BUX98A</b>	400 450			V V
V <sub>CER(sus)*</sub>	Collector-Emitter Sustaining Voltage	L = 2mH      I <sub>C</sub> = 1 A for <b>BUX98</b> for <b>BUX98A</b>	850 1000			V V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	for <b>BUX98</b> I <sub>C</sub> = 20 A			1.5	V
		for <b>BUX98A</b> I <sub>C</sub> = 16 A      I <sub>B</sub> = 4 A			1.5	V
		I <sub>C</sub> = 24 A      I <sub>B</sub> = 3.2 A I <sub>B</sub> = 5 A			5	V
V <sub>BE(sat)*</sub>	Base-Emitter Saturation Voltage	for <b>BUX98</b> I <sub>C</sub> = 20 A			1.6	V
		for <b>BUX98A</b> I <sub>C</sub> = 16 A      I <sub>B</sub> = 4 A			1.6	V
t <sub>on</sub>	Turn-on Time	for <b>BUX98</b>			1	μs
t <sub>s</sub>	Storage Time	V <sub>CC</sub> = 150 V      I <sub>C</sub> = 20 A			3	μs
t <sub>f</sub>	Fall Time	I <sub>B1</sub> = - I <sub>B2</sub> = 4 A			0.8	μs
t <sub>on</sub>	Turn-on Time	for <b>BUX98A</b>			1	μs
t <sub>s</sub>	Storage Time	V <sub>CC</sub> = 150 V      I <sub>C</sub> = 16 A			3	μs
t <sub>f</sub>	Fall Time	I <sub>B1</sub> = - I <sub>B2</sub> = 3.2 A			0.8	μs

\* Pulsed: Pulse duration = 300 μs, duty cycle = 1.5 %

**TO-3 (version R) MECHANICAL DATA**

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		11.7			0.460	
B	0.96		1.10	0.037		0.043
C			1.70			0.066
D			8.7			0.342
E			20.0			0.787
G		10.9			0.429	
N		16.9			0.665	
P			26.2			1.031
R	3.88		4.09	0.152		0.161
U			39.50			1.555
V		30.10			1.185	



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